Traveler Title	Pair Assembly-1st Assembly			
Traveler Abstract	The following procedure is to define the steps for the first assembly of a single 5-cell cavity that will be used for a C50 cavity pair assembly. Before initiating this procedure, the cavity must have been high pressure rinsed as per the appropriate procedure.			
Traveler ID	C75-CPR-ASSY-FRST			
Traveler Revision	R1			
Traveler Author	Danny Forehand			
Traveler Date	09-Dec-2019			
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Approval Signatures				
Approval Dates	09-Dec-2019	09-Dec-2019	09-Dec-2019	
Approval Title	Author	Reviewer	Project Manager	

References	List and Hyperlink all documents related to this traveler. This includes, but is not limited to: safety (THAs, SOPs, etc), drawings, procedures, and facility related documents.			
CRM-088-2005-0001 CEBAF Rework Cavity Pair (sheets 1 & 2)	Indium Wire Cleaning Procedure	Indium Pressing Procedure	Ionized Nitrogen Cleaning with Particle Counter Procedure	

Revision Note	
R1	Initial release of this Traveler.

Step No.	Instructions	Data Input
A	Record Cavity Serial Number Technician login :	[[CAVSN]] <<CAVSN>> [[CPRSN]] <<CPRSN>> [[InitialTech1]] <<SRFCVP>> [[InitialTech2]] <<SRFCVP>> [[InitialTime]] <<TIMESTAMP>>
B	Requirements for performing this procedure: All assembly hardware cleaned.	
1	**Preparation for Assembly Steps:** **All cavity pair fasteners, HOM elbows, HOM filters, field probe, doglegs and inner adapter have been cleaned and are available for use. The following list of components shall be gathered from the cleaned cavity pair hardware set.**	
2	**HOM elbow assembly hardware:** 25 pcs. 1/4-20 SiBr nut 96 pcs. 1/4" SS belleville washers 24 pcs. 1/4-20 x 1.5" lg. 316 SS hex head CS 1 pc. 1/4-20 x 1.25" lg. 316 SS hex head CS 2 pcs. HOM Elbows	[[HOMESN1]] <<HOMESN>> [[HOMESN2]] <<HOMESN>>
3	**Indium wire 99.99% pure** 2 pcs. Indium .060" diameter, 12" long	

Step No.	Instructions	Data Input
4	**HOM Elbow Installation Preparation:** Clean the handles and upper shelf of a cleanroom cart with an isopropyl soaked wipe. Clean the cart with ionized nitrogen. Visually inspect each indium seal path. It should be smooth and free of scratches, dings, residual indium and stains. Contact the supervisor if there are any discrepancies. Carefully place each component onto the clean room cart wipes.	[[HOMPrepTech]] <<SRFCVP>> [[HOMPrepDate]] <<TIMESTAMP>> [[HOMPrepComment]] <<COMMENT>>
5	Press indium seals onto the proper flange of each HOM elbow as per the Indium Pressing Procedure.	
6	Individually clean the HOM elbows as per the Ionized Nitrogen Cleaning with Particle Counter Procedure and inspect indium seals after nitrogen cleaning is complete. Place elbows back on the wipe on the cleanroom cart.	
7	Organize hardware by placing four belleville washers on four SHCS. Gather four flat washers and four SiBr nuts Clean the hardware as per the Ionized Nitrogen Cleaning with Particle Counter Procedure. Place the hardware on the top shelf of the cleanroom cart, next to the elbows.	
8	Clean the following tools as per the Ionized Nitrogen Cleaning with Particle Counter Procedure and place them onto the cart: 1/4" drive torque wrench (10-50 in. lb. range) 1/4" drive torque wrench (40-200 in. lb. range) 1/4" drive 7/16" socket 7/16" combination wrench	

Step No.	Instructions	Data Input
9	**Cover Cavity Flanges:** The cavity will already be in the assembly area with all flanges uncovered to accomodate drying. Gather a set of cavity flange covers, gore tex gaskets and spring clamps. Cover the spring clamps with rubber gloves as per the spring clamp cover procedure. Clean required cavity flange covers, gaskets and clamps with clean ionized nitrogen in front of the particle counter as per the Ionized Nitrogen Cleaning with Particle Counter Procedure. Carefully place the flanges and spring clamps onto the top shelf of the cleanroom cart. Before covering the cavity flange--consider the following: ❖ Attach flange covers with one motion as to not rotate or vibrate flanges once together ❖ Never position your body or clothing over an opening ❖ Replace and clean new gloves if they are damaged prior to or during an operation ❖ Only one person should be near the cavity during this blanking operation Inspect cavity sealing surfaces of cavity flanges as covers are installed. Starting at the bottom, cover the beam-line flange and clamp in place. Cover each HOM cavity flange and clamp in place. Cover the Field probe flange and clamp in place. Cover the FPC flange and clamp in place. Cover the top beam-line flange and clamp in place.	[[BlankTech]] <<SRFCVP>> [[Blankdate]] <<TIMESTAMP>> [[BlankComment]] <<COMMENT>>

Step No.	Instructions	Data Input
10	**HOM Assembly onto the cavity:** **Note:** **Attach HOM elbow with one motion as to not rotate or vibrate flanges once together** **Never position your body or clothing over an opening** Carefully remove HOM flange cover and install same onto the filter flange of the HOM elbow that will be assembled to cavity. Insert two opposite screws with appropriate washers into elbow flange. Bring elbow up to cavity, making sure the flanges are perfectly aligned (refer to drawing CRM-088-2005-0001 for proper orientation of HOM elbows). Thread nuts onto bolts and slightly tighten to ensure cleanliness while installing remaining fasteners. Install remaining hardware. Repeat for the other HOM elbow.	[[HOMTech1]] <<SRFCVP>> [[HOMTech2]] <<SRFCVP>> [[HOMComment]] <<COMMENT>>
11	**Torque HOM elbow flange hardware:** Evenly torque all bolts, except corners, incrementally to 30, 40, and then 55 in. lbs. Torque corner bolts to 40 in. lbs. Recheck final torque of all bolts.	[[TorqueTech1]] <<SRFCVP>> [[TorqueTech2]] <<SRFCVP>> [[TorqueComment]] <<COMMENT>> [[HOMEAssyComplete]] <<TIMESTAMP>>